

0.1 to about 50 with respect to the grown core nanocrystal, and a size of the grown core nanocrystal is about 10 nm to about 10000 nm.

2. The method according to claim 1, wherein the semiconductor particle is a particle consisting of one of ZnSe, ZnO, ZnS, $\text{Zn}_x\text{Cd}_{1-x}\text{Se}$, and $\text{Zn}_x\text{Cd}_{1-x}\text{S}$, where $0 < x < 1$. 5

3. The method according to claim 1, wherein the transition metal of Cu^{2+} emits green light.

4. The method according to claim 1, wherein the transition metal of Tb^{3+} emits green light. 10

5. The method according to claim 1, wherein the transition metal of Mn^{2+} emits red light.

6. The method according to claim 1, wherein the quantum rod emits a color of light, the rod shape is longer than Bohr radius of excitation of the semiconductor particle, and the transition metal determines the color of light emitted by the quantum rod. 15

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